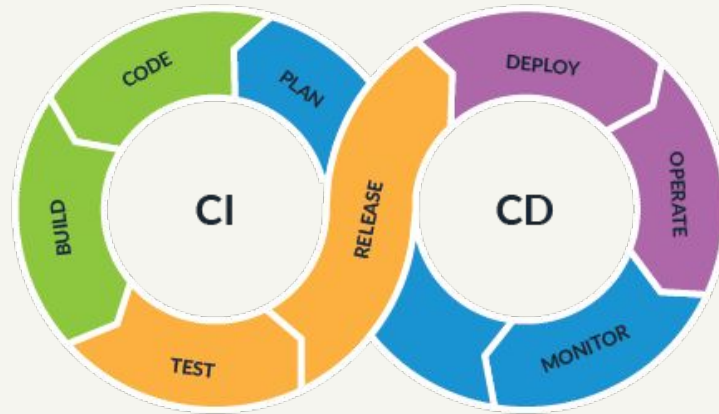# CI/CD

**Continuous Integration and
Continuous Delivery/Continuous Deployment.**

Shubham Mishra

DevOps Engineer

I am here because i love knowledge sharing.

What is CI/CD?

CI/CD is a method to frequently deliver apps to customers by introducing automation into the stages of app development. The main concepts attributed to CI/CD are continuous integration, continuous delivery, and continuous deployment.

CI/CD pipeline:- It is a chain of events, By using cit developers can make changes to code that are then automatically tested and pushed out for delivery and deployment.

CI/CD tools:- Jenkins, CIrcle CI, Bambo Git Lab
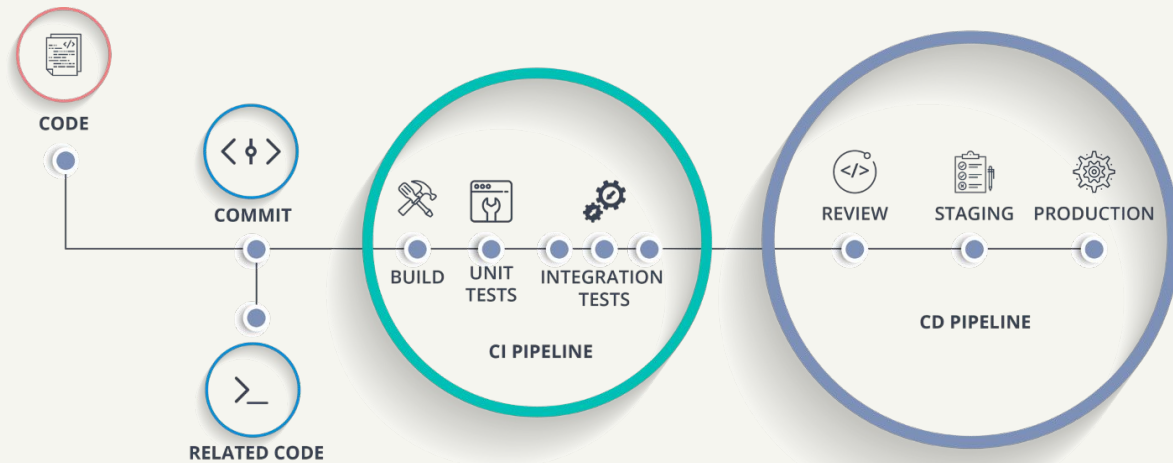
Benefits of CI/CD implementation

- Happier users and customers
- Accelerated time-to-value
- Recover faster
- Reduce risk
- Deliver faster
- Expend less manual effort
- Generate extensive logs

- Make easier rollbacks
- Accelerated Release Cycles
- Fault Detection & Isolation
- Enhanced Test Reliability
- Enhanced Transparency & Accountability
- Frequent Updates & Maintenance

CICD with aws code pipeline
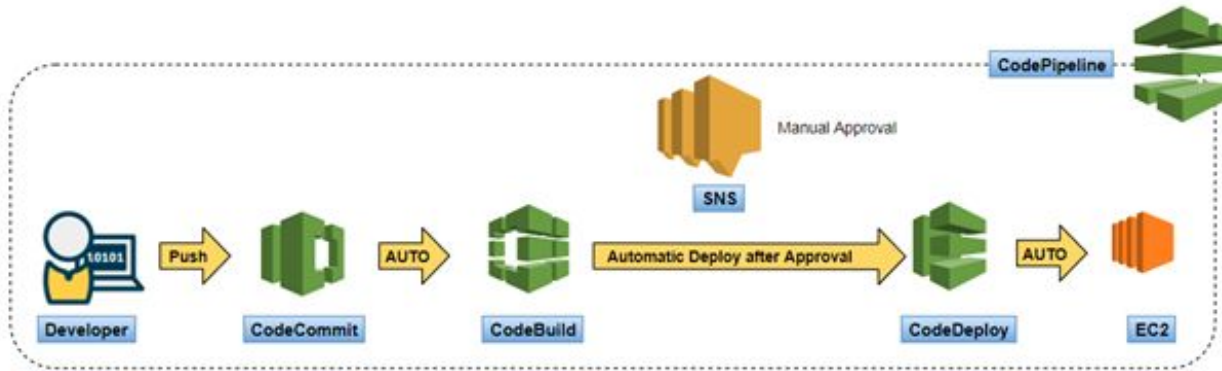
CI/CD Pipeline
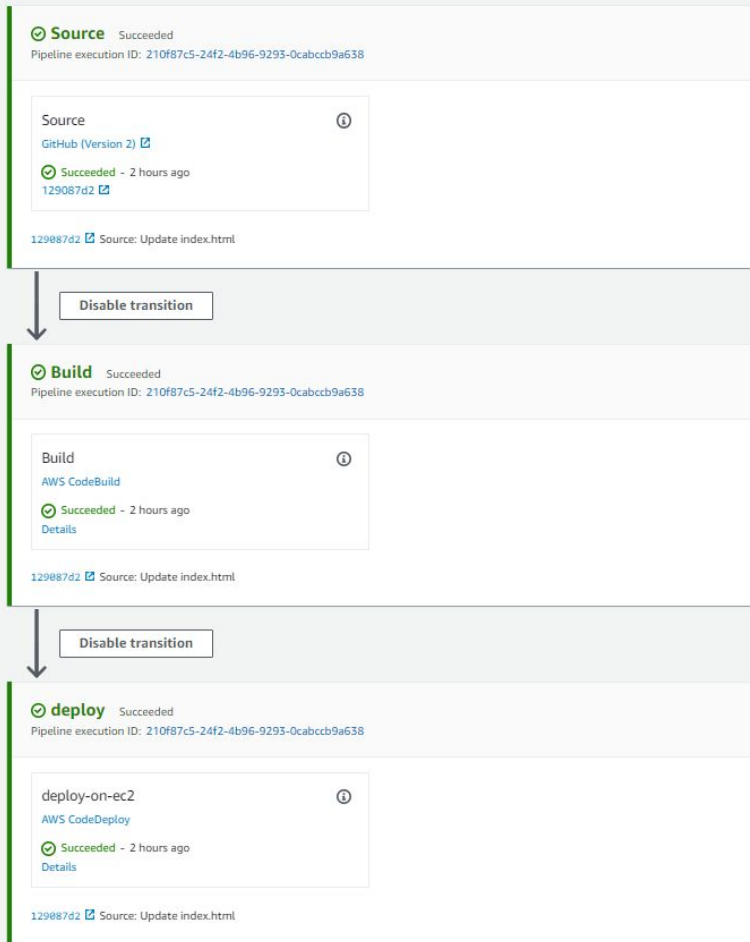
Preparation for creating aws pipeline

1:- Create the below resources:-
VPC, Subnet (Private and Public), Route tables, Internet gateway, Nat Gateway

2. Configure the VPC, Subnet (Private and Public), Internet gateway, Nat Gateway

3. Launch a ec2 instance for on premises deployment
https://www.youtube.com/watch?v=kNfc9u6d2mg (for step 3,4,5,6 and 7)

4. Install code deploy agent on ec2
https://docs.aws.amazon.com/codedeploy/latest/userguide/codedeploy-agent-operations-install-ubuntu.html

5. Create a role for ec2 code deploy

6. Configure role with code deploy agent:-
sudo nano /etc/codedeploy-agent/conf/codedeploy.onpremises.yml
---
aws_access_key_id: *******************
aws_secret_access_key: ***************
iam_user_arn: arn:aws:iam::*********:user/test-user
region: ap-south-1

7. Install, configure aws cli and register ec2 instance with code-deploy-on-premises-instance
Aws cli instalation: - https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html
Command for register:- aws deploy register-on-premises-instance --instance-name test-ec2 --iam-user-arn
arn:aws:iam::390346715016:user/test-user

8. Create buildspec.yml and appspec.yml files to git repository root.

CI/CD Tools Comparison

	Jenkins	circleci	TeamCity	Bamboo	GitLab
Open source	Yes	No	No	No	No
Ease of use & setup	Medium	Medium	Medium	Medium	Medium
Built-in features	3/5	4/5	4/5	4/5	4/5
Integration	★ ★ ★ ★ ★	★ ★ ★	★ ★ ★ ★	★ ★ ★	★ ★ ★ ★
Hosting	On premise & Cloud	On premise & Cloud	On premise	On premise & Bitbucket as Cloud	On premise & Cloud
Free version	Yes	Yes	Yes	Yes	Yes
Build Agent License Pricing	Free	From $39 per month	From $299 one-off payment	From $10 one-off payment	From $4 per month per user
Supported OSs	Windows, Linux, macOS, Unix-like OS	Linux or MacOS	Windows, Linux, macOS, Solaris, FreeBSD and more	Windows, Linux, macOS, Solaris	Linux distributions: Ubuntu, Debian, CentOS, Oracle Linux

Thank you!

DevOps Engineer likes to play with technology!

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